

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
14 April 2005 (14.04.2005)

PCT

(10) International Publication Number
WO 2005/033350 A1

(51) International Patent Classification⁷: **C22C 38/00**,
45/02

(21) International Application Number:
PCT/US2004/032093

(22) International Filing Date: 1 October 2004 (01.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/508,114 1 October 2003 (01.10.2003) US

(71) Applicant (for all designated States except US): **LIQ-
UIDMETAL TECHNOLOGIES, INC.** [US/US]; 25800
Commercentre Drive, Suite 100, Lake Forest, CA 92630
(US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **JONHSON,**
William, L. [US/US]; 3546 Mountain View, Pasadena, CA
91107 (US). **KIM, Choongnyun, Paul** [US/US]; 19563
Turtle Ridge Lane, Northridge, CA 91326 (US).

(74) Agent: **GREEN, Robert, A.; Christie Parker &
Hale, LLP,** P.O. Box 7068, Pasadena, CA 91105,
_____ - (US).

(81) Designated States (unless otherwise indicated, for every
kind of national protection available): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM,
TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM,
ZW.

(84) Designated States (unless otherwise indicated, for every
kind of regional protection available): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI,
SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ,
GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.

(54) Title: FE-BASE IN-SITU COMPOSITE ALLOYS COMPRISING AMORPHOUS PHASE

(57) Abstract: An Fe-base in-situ composite alloy, castable into 3-dimensional bulk objects, where the alloy includes a matrix having one or both of a nano-crystalline phase and an amorphous phase, and a face-centered cubic crystalline phase. The alloy has an Fe content more than 60 atomic percent.



WO 2005/033350 A1